WMU ENERGY REDUCTION

Goal-Reduce energy costs for the university, students, taxpayers.

Goal-Reduce pollution to save the environment.

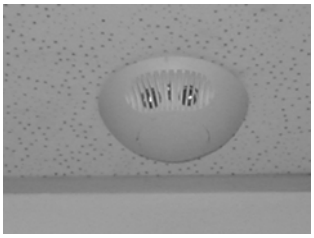
Lighting Conversions

- T12 to T8 lighting conversion. 34 Watts per lamp to 32 watts per lamp. Plus 15% savings for electronic ballast conversion.

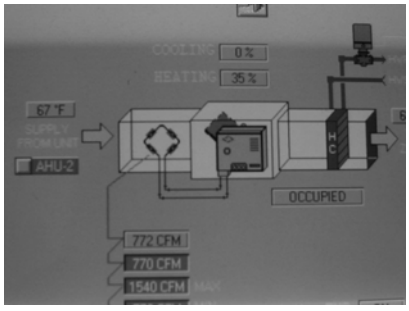
DDC Control of HVAC

- DDC-Direct Digital Control-Electronic controls of Heating Ventilating Air Conditioning [HVAC]
- Converting to Web based.[Niagara]
- Cascade control.

- Occ. Sens.-Turns off lighting and HVAC when no one is in the space.



- VAV-Variable Air Volume-controls the amount of air going into a space. Occupancy Sensor tells VAV to close down. Also changes temperature set-point 2 degrees off of Set-point Policy.



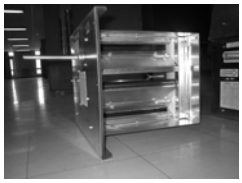
- VFD-Variable Frequency Drive-changes the speed of the fan motor according to the flow through the VAV. Slower speed saves energy.

Temperature Set point Policy

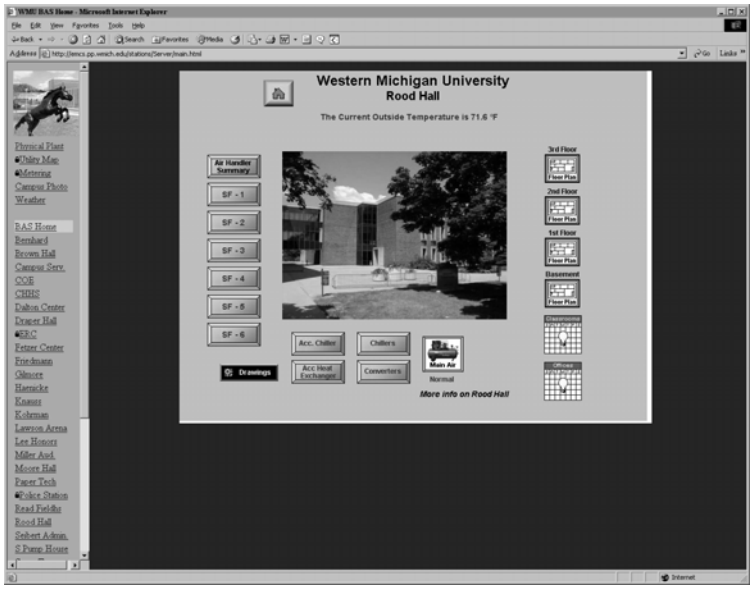
- Heating Season- 70 Deg. F. Max heating level.
- Cooling Season- 75 Deg. F. Max cooling level.
- Daytime setback- 2 Deg. F. above/below set point policy.
- Nighttime setback- 60 Deg. F. 80 Deg. F.
- Variances based on special needs.

Projects

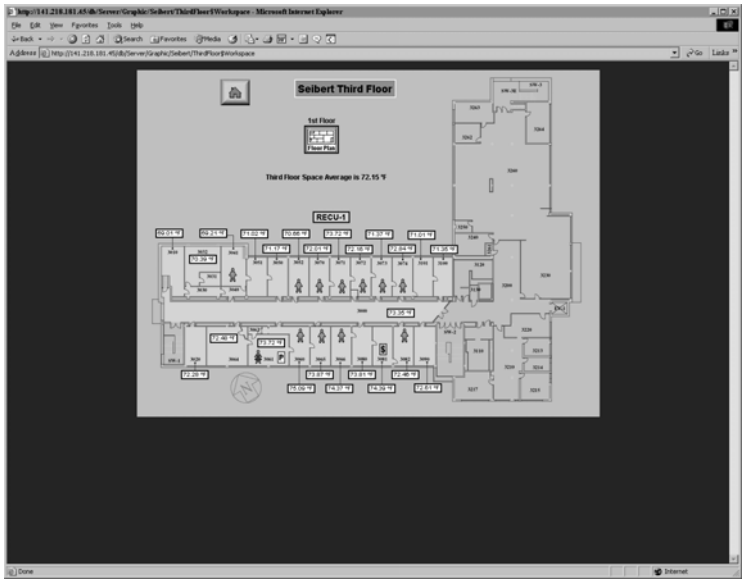
- Dalton; DDC-VAV-VFD-Occ. Sens. conversion of Auditoriums, Library and large group practice rooms.
- Brown/Sprau; DDC/VAV/VFD conversion with Occ. Sens.
- Fetzer; DDC conversion with Occ. Sens.
- SRC; Replace MH fixtures with CFL. 108 W and158 W /fixture savings. Occ. Sens. to add additional savings. Daylight harvesting. 1M Kwh saved.



Rood Hall- Just completed, full DDC, Occ Sensor, VAV, VFD. Part of building renovation and ACM abatement. Anticipated energy payback = 4.88 yr. Total project payback 9-14 yr.

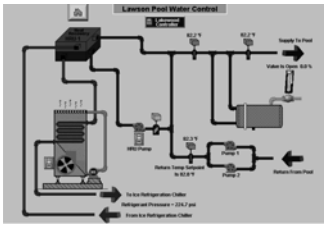


Icons show occupancy

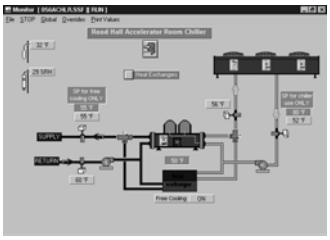


Unique Projects

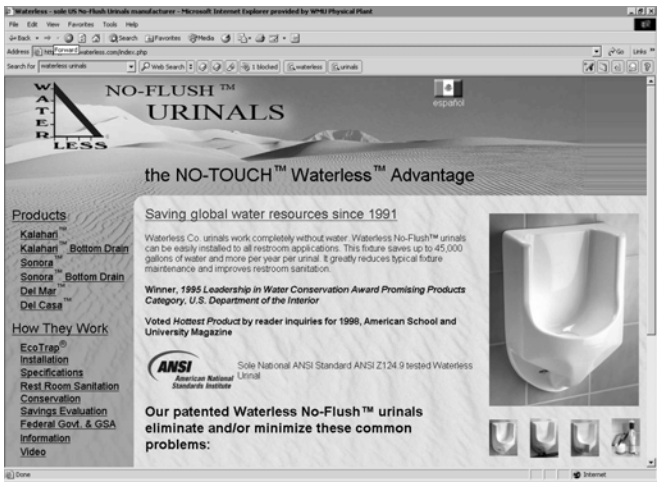
- Lawson/Gabel; Recover heat from ice rink to heat pool in joined building.
- Improves ice making machine performance-Coupled with VFD on cooling tower-smoother running.



- Rood Accelerator; heat exchanger to cool equipment and space in place of mechanical cooling in cool weather. [<50 Deg F. OAT]



Waterless urinals

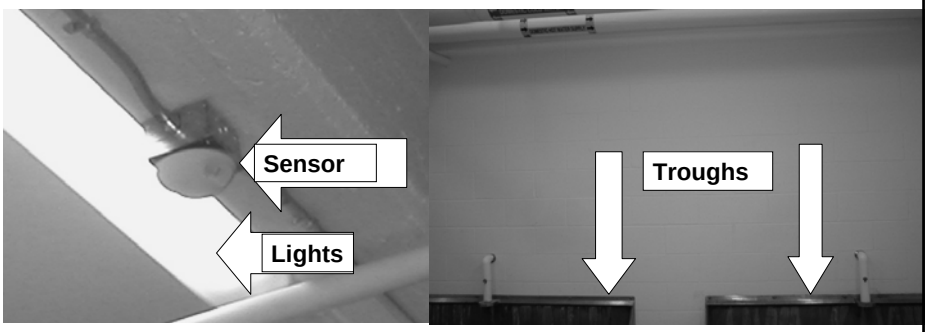


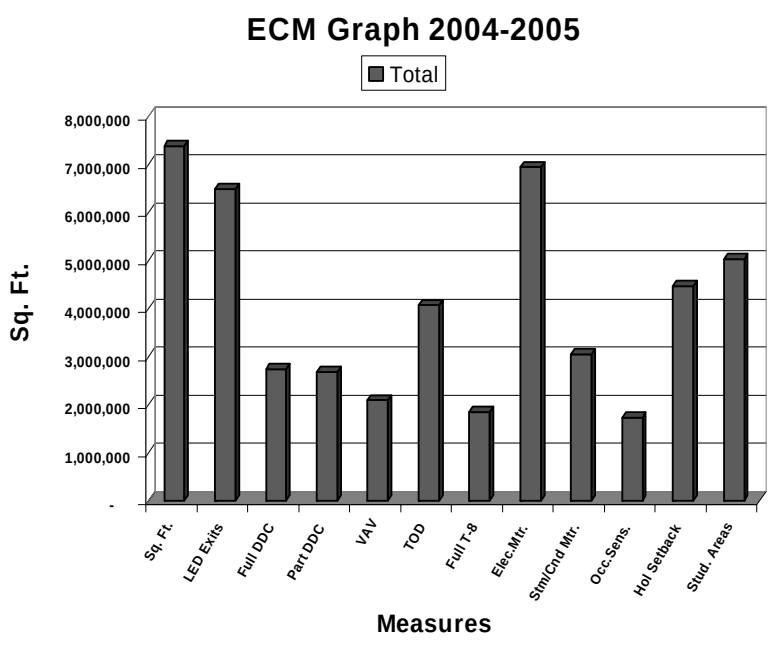
Water-”less” Urinals via Occupancy Sensors

•Trough Urinals and Lights left on all year- football stadium. Identified by trades as a waste.

•Occupancy Sensor now turns off the lights and water when restroom is un-occupied.

•29% reduction in water consumption.





Current projects

- Convert Health Center to full DDC
- Convert Welborn printing building to DDC
- Connect more water “less” urinals to Occupancy Sensors.

Upcoming projects

- Convert T12 lighting to T8[841 lamps].
- Not T5. [Heat output.]
- Reflectors- Reduce number of lamps in fixture. ¼ to ½ of lamps. Reduces 34 watts per lamp per fixture instead of 2.
- Convert MH lighting to CFL.

WMU Website

- Further information on WMU efforts.
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